REMARKS

A petition to extend the time to June 30, 2003, for response to the above-noted Office action is being filed herewith.

Also, in response to the above-noted Office action:

(1) the certified copy of the priority application, for this application, was filed in the USPTO in January, 2003, and

(2) an information disclosure statement is being filed herewith to officially cite to the Commissioner the reference noted in the specification of this application.

Applicant is proposing to amend Figs. 1 and 4a of the drawings, as noted above, to correct minor numbering errors. Applicant requests that the Examiner review and approve these amendments.

Applicant has amended claims 4 and 6 to provide proper antecedent basis for elements set forth in the claims.

Claim 1 has been rejected under 35 U.S.C. § 112, second paragraph, because the Examiner considers the phrase "by way of" at line 5 of claim 1 to be confusing and unclear. In response to this rejection, applicant has amended claim 1 by deleting the phrase "by way of" and inserting the word "through." Applicant submits that claim 1 is now clear, and requests that the rejection under § 112, second paragraph, be withdrawn.

As suggested by the Examiner, applicant has reviewed the remaining claims for use of the phrase "by way of" and has amended claims 7, 8, 10, 12, 14 and 16 accordingly.

The Examiner has indicated that claims 2, 10, 12 and 14 are allowable

Claims 1, 11, 16, 17 and 19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,035,945 (hereinafter "the Ichijyou patent).

As set forth in applicant's claim 1, the mode change mechanism is for changing the operation of the rotary hammer in any of three modes. The mode change mechanism includes a mode change sleeve which is permanently driven by and is shiftable along the intermediate shaft.

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At the top of page 22 of this application, applicant further sets forth in claim 1 that, "upon the switching of the actuator (8) by a user, shifts the mode change sleeve (52) along the intermediate shaft (24) amongst the three modes positions...," which clearly sets forth structural features of the mode change sleeve to allow the sleeve to shift along the intermediate shaft amongst the three modes.

The Ichijyou patent shows a hammer drill, which includes a cylindrical sleeve 6. The Examiner has characterized the sleeve 6 as a "mode change sleeve" in the context of applicant's claims 1, 11, 16, 17 and 19. The only mode change which is effected by the sleeve 6 of the Ichijyou patent is to place the drill in, or remove the drill from, the hammer mode. The sleeve 6 is not used to effect the rotary drive or the neutral state. Therefore, the sleeve 6 does not teach a "mode change sleeve shiftable along the intermediate shaft to change the operation of the rotary hammer to operate in any of the three modes," such as the sleeve set forth in applicant's claim 1.

For the foregoing reasons, applicant submits that applicant's claim 1 is patentably distinguishable over any teaching of the Ichijyou patent, and hereby requests the withdrawal of the rejection of claim 1 under 35 U.S.C. §102(b).

Rejected claims 11, 16, 17 and 19 depend directly from claim 1, and distinguish over any teaching or suggestion of the Ichijyou patent for the same reasons expressed above with respect to the distinguishment of claim 1 over the teaching of the Ichijyou patent.

Further, applicant sets forth in claim 11 a biasing arrangement between the actuator and the mode change sleeve. As set forth in claim 1, the actuator is switchable amongst the three modes of operation. The biasing arrangement, as set forth in claim 11, biases the mode change sleeve towards a position on the intermediate shaft which corresponds to the position of the actuator. Applicant submits that, as noted above, the mode change

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sleeve is movable to accommodate the three modes of operation, and that the biasing arrangement of claim 11 is structured to provide the necessary bias for moving the sleeve to any, and all, of the three modes of operation.

The biasing arrangement of the Ichijyou patent is not structured to function in the manner set forth in applicant's claim 11, and cannot bias the sleeve 6, for example, into the rotary mode.

Therefore, for the foregoing reasons, applicant submits that claim 11, and claims 16, 17 and 19, clearly and patentably distinguish over any teaching of the Ichijyou patent, and requests that the rejection thereof be withdrawn.

Claims 3 through 9, 13, 15, 18 and 20 have been rejected as being unpatentable over the Ichijyou patent in view of U.S. Patent No. 5,056,607 (hereinafter "the Sanders patent ").

Applicant's claims 3 through 9, 13, 15, 18 and 20 depend directly or indirectly from claim 1, and are patentably distinguishable over the Ichijyou patent, and the Ichijyou patent in view of the Sanders patent, for the same reasons expressed above with respect to the distinguishment of applicant's claim 1 over the Ichijyou patent.

As indicated above, claims 3 through 9, 13, 15, 18 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Ichijyou patent in view of the Sanders patent. In the text of the above-noted Office action on page 4, in the first paragraph following the Examiner's statement of rejection, the Examiner indicates that the Ichijyou patent does not show certain features, but does show certain other features. The features noted by the Examiner appear to be features which are set forth in several of applicant's claims. It is noted that the Examiner does not refer in any manner to the Sanders patent in the first paragraph following the statement of rejection.

In the second paragraph following the above-noted Examiner's statement of rejection, the Examiner notes that the Ichijyou patent

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lacks a housing part, but that it would be obvious to provide the rotary hammer of the Ichijyou patent with the housing part of the Sanders patent.

Applicant sets forth "a housing part (2,4)" in each of claims 9 and 15 only, and does not set forth a housing part in any other claims of the application. Consequently, applicant's claims 3 through 8, 13, 18 and 20, which have been rejected as unpatentable over the Ichijyou patent **in view of the Sanders patent**, and which do **not** set forth "a housing part," clearly and patentably distinguish over any possible suggestion of the combination of the Ichijyou patent and the Sanders patent. Therefore, applicant requests withdrawal of the rejection of claims 3 through 8, 13, 18 and 20.

In the above-noted Office action, the Examiner states that,

> "Ichijyou et al. discloses a mode changing member as shown in Figure 3 including an actuator (8) for shifting the sleeve, a spindle lock (rotation restricting member 9) for locking the spindle against rotation, a rotatable knob ("A" as designated in fig. 8), an eccentric pin ("P" as designated in fig. 8)."

The "sleeve" in the above-quoted passage is apparently referring to sleeve 6, which, as noted above by applicant, is limited to the control of the hammer drill in the hammer mode only. Applicant submits that the aggregation of elements noted by the Examiner in the above-quoted passage are not "a mode changing member" in the context of applicant's claims.

Further, the "housing part" 11 (Fig. 3 and 4) of the Sanders patent, to which the Examiner refers, is actually "a gear case rear partition" (see col. 2, line 60, of the specification of the Sanders patent), which is fully contained within the actual housing 1 of the power tool. The partition 11 is designed and structured to perform a partitioning function within the tool of the Sanders patent, and neither suggests nor provides motivation for combining the teachings of the Ichijyou patent and the Sanders patent for any purpose, much less to provide mounting for a mode change member.

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Applicant sets forth in claim 15 that the rotatable knob 8 is mounted on "the housing part (2,4)." The Examiner has indicated that the housing part in the combination of the Ichijyou patent and the Sanders patent is the partition 11 of the Sanders patent, which is completely contained within the housing 1 of the tool of the Sanders patent. The knob is to be mounted such that it is accessible for rotating to effect the mode changes. If the knob is mounted on the partition of the Sanders patent, the knob would not be accessible.

For the foregoing reasons, applicant submits that claims 9 and 15 further patentably distinguish over any possible suggestion derivable from the Ichijyou patent and the Sanders patent, and requests withdrawal of the rejection of claims 9 and 15.

Applicant's claims patentably distinguish over the references cited by the Examiner, but not relied on in any rejection of applicant's claims, by virtue of structural features and differences set forth in applicant's claims and not shown in the references.

For the forgoing reasons, applicant submits that claims 1, 3 through 9, 10, 11, 13 and 15 through 20 are allowable and hereby request such allowance.

Applicant submits further that this application is in condition for allowance and hereby solicits such allowance.

As noted above, versions of the above rewritten paragraphs, with bracketing and underlining to show the changes, appear below.

--**[0036]** The rotary hammer includes a spindle 18 which is mounted for rotation within the hammer housing in a conventional manner. Also, a hollow piston 20 is located slideably within the rear of the spindle 18 in a conventional manner. The hollow piston 20 is reciprocated within the spindle 18 by a hammer drive arrangement as described in more detail below. A ram 21 follows the reciprocation of the piston 20 in the usual manner [die] <u>due</u> to successive reversing pressures in an air cushion within the spindle 18 between the piston and the ram. The reciprocation of the ram 21 causes the

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ram to repeatedly impact an anvil 22 which repeatedly impacts a tool or bit(not shown). The tool or bit is releasably secured to the rotary hammer by a tool holder of conventional design, such as and SDS-Plus type tool holder 16, which enables the tool or bit to reciprocate within the tool holder to transfer the forward impact of the anvil 22 to a surface to be worked, such as a concrete block. The tool holder 16 also transmits rotary drive from the spindle 18 to the tool or bit secured within the tool holder.--

--[0038] The hammer drive arrangement includes a hammer drive sleeve 34 which is rotatably mounted on the intermediate 24 and which has a wobble plate track 36 formed around the sleeve at an angle to the axis of the intermediate shaft. A wobble plate ring 38, having an extending pin 40, is mounted for rotation around the wobble plate track 36 by way of ball bearings 39 in a conventional manner. The end of the wobble pin 40, remote from the wobble plate ring 38, is mounted through an aperture in a trunnion 42 which is pivotally mounted to the rear end of the hollow piston 20 by way of [to] two arms 44 having aligned apertures formed therethrough. Thus, when the hammer drive sleeve 34 is rotatably driven about the intermediate shaft 24, a wobble plate drive (which is formed by the wobble plate track 36, the wobble plate ring 38, the ball bearings 39, the wobble pin 40, the trunnion 42 and the arms 44) reciprocally drives the hollow piston 20 in a conventional manner. The hammer drive sleeve 34 has a set of driven splines 48 formed on a forward end of the sleeve. The driven splines 48 are selectively engageable with the driving gear 50 by way of the mode change mechanism described below. When the intermediate shaft 24 is rotatably driven by the motor pinion, and the mode change mechanism engages the driving splines 48 of the hammer drive sleeve 34, (1) the driving gear 50 rotatably drives the hammer drive sleeve, (2) the piston 20 is reciprocally driven by the wobble plate drive, and (3) the tool or bit mounted in the tool holder 16 is repeatedly impacted by the anvil 22 by way of the action of the ram 21.--

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--[0039] The spindle drive member includes a spindle drive sleeve 56 which is mounted for rotation about the intermediate shaft 24. The spindle sleeve drive 56 includes a set of driving teeth 60 at the forward end thereof which are permanently in engagement with the teeth of a spindle drive gear 62. The spindle drive gear 62 is mounted non-rotatably on the spindle 18 by way of a drive ring 64 which has a set of teeth formed on the internal circumferential surface thereof which are permanently engaged with a set of drive teeth 66 formed on the outer cylindrical surface of the spindle 18. Thus, when the spindle drive sleeve 56 is rotatably driven, the spindle 18 is rotatably driven, and this rotary drive is transferred to the tool or bit by way of the tool holder 16. The drive sleeve [36] 56 has a driven gear 58 located at a rearward end of the drive sleeve which can be selectively driven by the intermediate shaft driving gear 50 by way of the mode change mechanism.--

--[0047] As the internal teeth 54 are engaged with the hammer driven splines 48, rotation of the intermediate shaft 24 is transmitted to the hammer drive sleeve 34 which rotates with the intermediate shaft. Thus, rotary drive from the motor is translated into a reciprocating drive of the hollow piston 20 by way of the driving gear 50 of the intermediate shaft, the mode change sleeve 52, the hammer driven splines 48 on the hammer drive sleeve 34 and the wobble plate mechanism, whereby hammering action occurs. The engagement of the internal teeth 54 of the mode change sleeve 52 with the driving gear 50 of the intermediate shaft [54] 24 and the driven gear 58 of the spindle drive sleeve 56 transmits rotary drive from the intermediate shaft to the spindle drive sleeve 52. This rotary drive is then transmitted to the spindle 18 by way of the driving teeth 60 on the spindle drive sleeve 56, the spindle drive gear 62 and the spindle drive ring 64. Accordingly, the rotary hammer operates in the rotary hammer mode. Note that the rotary hammer can be moved into the rotary hammer mode by

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rotating the mode change knob 8 either counter-clockwise from the rotary drive only position or clockwise from the hammer only mode position.--

--**[0054]** A second embodiment of a rotary hammer having a mode change mechanism according to the present invention is shown in Figs. 3, 4a and 4b. The second embodiment is similar to the first embodiment of the rotary hammer, with like parts identified by like numerals, the difference being that the spindle drive member is a spindle drive pinion 56'. As shown in Figs. 3, 4a and 4b, the front end of a motor drives the intermediate shaft 24 of the rotary hammer by way of a motor pinion 23 and the drive gear 32 of the intermediate shaft. In this way, the intermediate shaft 24 is always driven in rotation [which] <u>when</u> the motor is switched on. The spindle drive pinion 56' has a rearward axial projection 70 which is rotatably mounted within a co-operating recess 72 within the front part of the intermediate shaft 24 by way of a needle bearing 74. Thus, the spindle drive pinion 56' can rotate relative to the intermediate shaft 24. The forward end of the spindle drive pinion 56' is rotatably mounted in a bearing 28 mounted in the rotary hammer housing. In the same way described above, rotary drive is transmitted from the intermediate shaft 24 to the spindle drive pinion 56' by the mode change sleeve 52 to rotatably drive the spindle 18 by way of the spindle drive gear 62.--

As further noted above, versions of rewritten claims 1, 4, 6, 7, 8, 10, 12, 14 and 16, with bracketing and underlining to show the changes, appear below.

1. (amended) A rotary hammer, which comprises:

an intermediate shaft (24) which is rotatably driven by a motor of the rotary hammer when power is supplied to the motor;

a spindle (18) which can be driven in rotation about its axis by the intermediate shaft 24 [by way of] <u>through</u> a spindle drive arrangement (62,64);

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a tool holder (16) arranged for rotation with the spindle (18) for releasably holding a bit or a tool such that the bit or tool can reciprocate;

a pneumatic hammering arrangement (20,21,22) located within the spindle (18) which can repeatedly impact the bit or tool held within the tool holder (16);

said pneumatic hammering arrangement comprising a piston (20) which can be reciprocally driven by a hammer drive arrangement (34,36,38,39,40,42) which can translate rotary drive from the intermediate shaft (24) to a reciprocating drive to the piston (20); and

a mode change mechanism for changing the operation of the rotary hammer to operate in any of three modes, a rotary drive only mode, a hammer only mode or a rotary hammer mode;

said mode change mechanism comprising:

a single actuator (8) switchable by a user of the rotary hammer amongst the three modes of operation;

a spindle driving member (56) rotatable on the intermediate shaft (24) for driving the spindle drive arrangement (62,64);

a hammer driving sleeve (34) rotatable on the intermediate shaft (24) for driving the hammer drive arrangement (34,36,38,39,40,42); and

a mode change sleeve (52) which is permanently driven by the intermediate shaft (24) and shiftable along the intermediate shaft [24] (24) to change the operation of the rotary hammer to operate in any of the three modes;

where, upon the switching of the actuator (8) by a user, shifts the mode change sleeve (52) along the intermediate shaft (24) amongst the three modes positions, such that in a first rotary drive only position the mode change sleeve (52) transmits rotary drive to the spindle driving member (56) to transmit rotary drive to the spindle drive arrangement (62,64), in a second hammer only position the mode change sleeve (52) transmits rotary drive to the hammer driving sleeve (34) to transmit rotary drive to the hammer

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drive arrangement (34,36,38,39,40,42), and in a third rotary hammer position the mode change sleeve (52) transmits rotary drive to the spindle driving member (56) and to the hammer driving sleeve (34) to transmit rotary drive to the spindle drive arrangement (62,64) and to the hammer drive arrangement (34,36,38,39,40,42).

4. (amended) The rotary hammer according to claim 3, wherein [the] a driven member (54) on the mode change sleeve (52) which engages [the] a driving member (50) on the intermediate shaft (24) is axially extended to form the driving member (54) of the mode change sleeve (52) which is engageable with the driven member (48) on the hammer drive sleeve (34).

6. (amended) The rotary hammer according to claim 5, wherein [the] a driven member (54) of the mode change sleeve (52) which engages [the] a driving member (50) of the intermediate shaft (24) is axially extended to form the driving member (54) which is engageable with the driven member (58) on the spindle drive sleeve (56).

7. (amended) The rotary hammer according to claim 1, which further comprises:

a driven member (48) on the hammer drive sleeve (34);

a driving member (54) on the mode change sleeve (52);

a driven member (58) on the spindle drive member (56);

the hammer drive sleeve (34) is located towards the rear of the mode change sleeve (52) and the driven member is engageable with the driving member (54) to transmit rotary drive from the intermediate shaft (24) to the hammer drive sleeve (34);

the spindle drive member (56) is located towards the front of the mode change sleeve (52) and the driven member (58) is engageable with the driving member (54) to transmit rotary drive from the intermediate shaft (24) to the spindle drive member (56); and

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the mode change mechanism is arranged such that in a first rotary drive only position the mode change sleeve (52) [os] is shifted to a forward position on the intermediate shaft (24) to transmit rotary drive to spindle driving member (56) [by way of] through the driving member (54) and the driven member 58, in a second hammer only position the mode change sleeve (52) is shifted to a rearward position on the intermediate shaft (24) to transmit rotary drive to the hammer driving sleeve (34) [by way of] through the driving member (54) and the driven member (48), and in a third rotary hammer position the mode change sleeve (52) is shifted to an intermediate position on the intermediate shaft (24) between the forward and rearward positions and transmits rotary drive to the spindle driving member (56) [by way of] through the driving member (54) and the driven member (58) and transmits rotary drive to the hammer driving sleeve (34) [by way of] through the driving member (54) and the driven member (48).

8. (amended) The rotary hammer according to claim 1, which further comprises:

a mode changing member (68); and

wherein the switching of the single actuator (8) shifts the mode change sleeve (52) [by way of] through the mode change member (68).

10. (amended) The rotary hammer according to claim 8, which further comprises:

a mode change arm (72) on the mode change member (68); and

wherein the mode change arm (72) extends laterally of the mode change member (68) with the arm (72) surrounding at least a part of the mode change sleeve (52) and is connected to the mode change sleeve (52) such that shifting of the mode change member (68) shifts the mode change sleeve (52) [by way of] through the mode change arm (72) amongst the three mode positions.

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12. (amended) The rotary hammer according to claim 1, which further comprises:

a mode change member (68);

a mode change arm (72) on the mode change member (68);

a biasing arrangement (76,78), which comprises:

a first spring member (76); and

a second spring member (78);

wherein the mode change arm (72) extends laterally of the mode change member (68) and at least partly surrounds a part of the mode change sleeve (52) and is connected to the mode change sleeve (52) such that shifting of the mode change member (68) shifts the mode change sleeve (52) [by way of] <u>through</u> the mode change arm (72) amongst its three positions;

the biasing arrangement (76,78) located between the actuator (8) and the mode change sleeve (52) in order to bias the mode change sleeve (52) towards the position on the intermediate shaft (24) which corresponds to the position to which the actuator (8) is switched; and

the first spring member (76) located between a forward end of the mode change sleeve (52) and a forward facing part of the mode change arm (72) and the second spring member (78) located between a rearward end of the mode change sleeve (52) and a rearward facing part of the mode change arm (72).

14. (amended) The rotary hammer according to claim 13, which further comprises:

a mode change member (68);

the spindle lock (70) comprising:

a first locking member (70); and

a second locking member (62,64); and

wherein the switching of the single actuator (8) shifts the mode change sleeve (52) [by way of] <u>through</u> the mode change member (68) and the first locking member (70) is located on the mode change member (68) and engages the second locking member (62,64)

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located on the spindle (18) when the mode change member (68) is shifted to a hammer only mode position to lock the spindle (18) against rotation.

16. (amended) The rotary hammer according to claim 1, which further comprises:

the pneumatic hammering arrangement comprising:

a ram (21);

a reciprocally driven piston (20) which is reciprocally drives the ram (21) [by way of] through a closed air cushion; and

an anvil (22) which is repeatedly impacted by the ram (21) and, in turn, impacts the bit or tool held in the tool holder (16).

If the Examiner wishes to discuss any aspects of this response, or any other aspects of this application, the Examiner should call applicant's representative, J. Bruce Hoofnagle, at 410 442-2417.

Respectfully submitted,

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